

INDOOR AIR AND COVID-19

ISSUE SUMMARY:

While COVID-19 is thought to spread mainly through close contact from person-to-person, a growing weight of emerging scientific evidence suggests that COVID-19 can also be spread by airborne, aerosol transmission, particularly indoors. Unless adequate precautions are taken, the longer a space is occupied and the more people that are present, the greater the potential for airborne transmission of the virus. As a result, lowering the concentration of SARS-CoV-2 by means of ventilation and filtration can play a role in controlling transmission of the virus, along with other measures such as social distancing, cleaning and disinfection. Ventilation can also reduce exposure to cleaning products, disinfectants, and the byproducts they produce.

The Office of Air and Radiation's Indoor Environments Division has coordinated with the EPA's Science Advisory Board, the Centers for Disease Control, the National Academy of Science other organizations such as the American Society of Heating, Refrigeration and Air-Conditioning Engineer's (ASHRAE) to track and characterize the emerging science related to potential airborne transmission of the SARS-CoV-2 virus and has played an important role in EPA's response to the COVID-19 pandemic, providing guidance and technical assistance to the general public and EPA stakeholders, as well as internal advice to EPA facility managers, on how to reduce potential exposure via airborne transmission of the virus indoors.

UPCOMING MILESTONES:

- Update web content and FAQs on Indoor Air and COVID-19 (Periodically and as needed).
- Hold informational webinars (Periodically and as needed).

BACKGROUND:

Scale and scope of environmental issue

- **Indoor Air COVID-19 concerns are receiving growing attention by scientific organizations.** The EPA Science Advisory Board (SAB), the Centers for Disease Control (CDC), the National Academies of Sciences, Engineering and Medicine (NAEM), other national and international science and technical organizations, in addition to ORD and OAR scientists, have significantly increased attention to airborne, aerosol transmission of the virus, particularly indoors, as well as the need for engineering controls, including ventilation and filtration, to help provide protection against COVID-19.
- **Science and guidance about Indoor Air COVID-19 issues are emerging and rapidly evolving.** The EPA Science Advisory Board (SAB) significantly increased the prominence of indoor air research needs when it provided early input to EPA on COVID-19 research issues. Many other leading scientific organizations have also increasingly raised concerns and highlighted research that supports concern regarding airborne, including aerosol, transmission of COVID-19. CDC, OSHA, and EPA COVID-19 guidance includes engineering controls such as ventilation and filtration and references

American Society of Heating, Refrigeration and Air-Conditioning Engineer's (ASHRAE) more detailed guidance on ventilation and filtration to help control airborne exposure.

- **EPA's Indoor Air Quality guidance has addressed viruses since the inception of the program in the 1980s.** Virus related content is included in IED's voluntary guidance related to air cleaners, flood-related cleaning, asthma, biological contaminants, schools, ozone generators that are sold as air cleaners, and HVAC systems.
- **Straightforward steps can be taken to reduce potential indoor airborne transmission of COVID-19 and the focus of material on indoor air and COVID-19 is on those measures.** These include increasing ventilation with outdoor air and air filtration as part of a larger, multi-layered strategy that includes other measures such as social distancing, limited occupancy, wearing cloth face coverings, surface cleaning/disinfecting, and handwashing. By themselves, measures to reduce airborne exposure to the virus that causes COVID-19 are not enough since airborne transmission is not the only way exposure to SARS-CoV-2 could potentially occur.

Legal obligations or public commitments

- EPA's authorizing legislation for indoor air provides broad authority in the areas of research and non-regulatory public guidance and information.
- Stakeholders have actively requested guidance and technical assistance addressing COVID-19 in residences, schools and workplaces, which has been provided since the pandemic began, primarily in the forms of web materials and webinars.
- Coordination with CDC, other federal agencies and industry is essential and ongoing.

KEY EXTERNAL STAKEHOLDERS:

Please check which stakeholder(s) are likely to reach out to the incoming political team about this issue. In the space provided, include concerns stakeholder(s) may raise.

☒ Congress ☒ Industry ☒ States ☒ Tribes ☒ Media ☒ Other Federal Agency
☒ NGO ☒ Other (name of stakeholder) Schools

Please describe key concern(s):

- Schools stakeholders have strong interest in how to reduce risks of indoor transmission of COVID-19.

MOVING FORWARD:

- In coordination with the CDC, other federal agencies, and organizations such as ASHRAE, continue to track, analyze, synthesize and communicate emerging science regarding potential airborne emissions of COVID-19, and update Indoor Air and COVID-19 guidance with practical measures to reduce potential exposures to such emissions as new information becomes available.

- Explore how the potential for airborne exposure to COVID-19 might be reduced in evacuations and sheltering-in-place situations precipitated by wildfires, hurricanes, floods and other natural disasters.

LEAD OFFICE/REGION: OAR

OTHER KEY OFFICES/REGIONS: REGIONS 1-10